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JUNIOR COLLEGE JOURNAL

VOLUME XXVI MAY, 1956 NUMBER 9

The President's Address*

EDWARD G. SCHLAEFER

THIS AUDIENCE does not have to be told that American college education has come to an imperative need for re-evaluating its structure. If college enrollments continue to mount in the millions in the coming years, and a predicted unprecedented boom starts in the early sixties, then, obviously, changes in our methods of operation will have to take place. The conditions which face us will *not* be temporary, like the World War II veterans boom, but *permanent,* and the pressure on the colleges will accelerate with time. Whatever decisions we make, it is unthinkable that we accept a reduction in instructional efficiency. Such reduction would quickly endanger student morale, and the confidence of the public.

Even now, however, it is impossible for some junior colleges to locate qualified teachers in certain of the sciences and in mathematics. What will it be like when the situation tightens up by a further increase in enrollments of 25 per cent, 50 per cent, and 100 per cent? I know that you have been thinking about, and discussing, these problems and will do more thinking during this convention.

In this opportunity to speak to you, I would like to synthesize some of the ideas on this problem which have appealed to me, project them in a hypothetical college in the future, and create thereby a kind of working model of things as they might be for your examination.

While pondering about the problem of how to present my materials, I discussed with a friend the fact that the leading magazines had carried vivid predictions of all phases of future life, but whenever they came to the subject of college they merely quoted great numbers and hurried on, and that I was interested in knowing what a good college in the future, say 20

EDWARD G. SCHLAEFER is President of Monmouth Junior College, Long Branch, New Jersey, and Immediate Past President of the American Association of Junior Colleges.

* This is the text of the speech President Schlaefer gave at the first General Session of the Convention of the American Association of Junior Colleges.

years from now, would be like. My friend, who is a science fiction enthusiast and a specialist in time machines, offered at once to arrange a trip. I quickly made up a small party; we set the dials for a modern college in the spring of 1976; and after a forward buzz and a couple clicks we stepped out on a beautiful college campus.

After exchanging greetings with the president of the college, who stood awaiting us, he proposed that, before touring the college, we sit down for a few minutes on a nearby bench and view in retrospect some of the important conditions which existed in 1956. "You will be better able then," he said, "to understand what you see."

"First," he said, "the communist effort to dominate the peoples of the earth had made sweeping advances. Fifteen hundred million people from the borders of Denmark to the Malay Peninsula were under communist domination or openly sympathetic, and hundreds of millions of others in Asia and Africa were being softened up.

"Second, with the coming of atomic energy and rocket propulsion, American reliance on air power through an abundance of oil was badly shaken.

"Third, scientific and technological advances brought increased industrial activity. Nowhere was this greater than in the communist countries. Russia and China amazed the visitors at the great Leipzig Fair in February, 1956, by the quality and variety of their exhibits.

"Fourth, America's great trump card, her superior 'know-how' was fading before the gains in technical education in the totalitarian countries. In a report by William Benton, published in the *Encyclopaedia Britannica Year Book,* released for publication on March 6, 1956, Russia had nearly twice as many students in higher education as did the United States. She had 2,000 technikums or junior colleges and 750 universities which were producing, in addition to other graduates, 50,000 well-trained engineers a year. When this number is added to the graduates in science and engineering in the satellite countries and to those of a 600,000,000 China, the total becomes staggering. All of this stood in contrast to your 19,000 to 20,000 engineering graduates a year. Moreover, the students in the Russian schools were all highly selected and state financed, whereas half of America's top-bracket high school graduates never entered college.

"Fifth, there was a widespread and growing dissatisfaction with the products of American education. It was charged with being inconsequential, incompetent, wasteful. One report made by the Carnegie Foundation and published in the quarterly for January, 1956, indicated that both the teaching and the learning of essential mathematics were declining at a shocking rate. This mounting evidence of low educational efficiency brought all segments of the people more and more to

the conviction that the schools and colleges could not be neglected without disastrous results to the national economy, the national security, and the confidence and contentment of the people.

"Sixth, rapid social changes produced a striking acceleration in college enrollments. It took three centuries of American college growth to reach the two and a half million enrollment of 1954, but in only sixteen years, in 1970, that enrollment was to double. Standing in contrast to this, the availability of college teachers constantly decreased. At the annual meeting of the National Association of State Universities in May, 1955, it was asserted that a possible shortage of 250,000 college teachers by 1970 would force the employment of a variety of intellectual cripples.

"Finally, your colleges were in a worrisome state. More than half of the private colleges were in the red with huge deficits. Your salaries in purchasing power had been dropping for years until, in the average, they were down to the salaries of semi-skilled and unskilled laborers. Your buildings were utterly inadequate to meet the gathering storm."

The president arose and we started for the college buildings. "In summary," he said, "you faced the worst crisis in American higher education. Your industrial, business, and political leaders were ready to act if the educators could produce a convincing plan."

As we approached the building, one member of the party asked, "Is this a junior college?"

The president stopped and momentarily seemed puzzled. "This is a student-centered college and a lineal descendant of the old junior colleges," he said, "but the term 'junior' went out years ago. Even by 1955, fewer than half of the two-year institutions still retained the term. It was completely misunderstood by the public. All post-high school institutions now are called college, community college, or institute."

We entered the south end of the building and came first to a physics laboratory, where the students were convening for the opening of the class. A uniformed custodian selected a film, which I noticed was numbered Ph 39 L, and, placing it in a machine, projected the instructions for the day. They were clear, well-spoken, and manifestly prepared with great care. The film showed the apparatus to be set up from various angles. Throughout the showing a series of questions were raised and reference made to the laboratory sheets for the day. I could not help but recall that the clearest and most easily understood address at the 1955 White House Conference on Education was President Eisenhower's welcoming address to the Conference presented by motion picture.

Following the short film of instructions, the custodian issued and supervised the transporting of equipment to the laboratory tables. He then distributed laboratory guide sheets which apparently accompanied the film. They were well-illustrated and contained not only laboratory instructions but the same set of significant questions mentioned in the instructions film. The students, in pairs, immediately went to work. The custodian never left the room. Also, not once during the laboratory period did any teacher in person enter the room. I looked in the storeroom and found everything in excellent order. The custodian was friendly, businesslike, and there was no nonsense. Looking at all phases, I could not see how a laboratory period could be run better.

Following the laboratory period, we went to an adjoining classroom. There, a different custodian was in charge. When the students were seated, he put a film cartridge in the projection machine and showed a motion picture on the principles of electro-magnetism. It was not a film showing a picture of a professor lecturing *about* physics, but a superb motion picture *of* the subject in question. The principles were developed through animated drawings, photographs, and applications. Throughout there were running comments and explanations. Frequently, significant questions were raised similar to those in the laboratory period. Again, the uniformed custodian remained in charge and no teacher came into the room.

Next, we visited briefly classes in sociology, American government, economics, and psychology. Always there were the same procedures and excellence of films with the same stimulating questions and application of principles. By this time we were full of questions and begged for a conference with the president.

The following are among the statements made by the president at the conference:

"We have few classroom teachers as such, and certainly no lecturers. In addition to laboratory materials and instructional sheets and films, a textbook has been developed to accompany the films of each course. There are no out-of-school assignments. Most homes with their distractions of children, television, animals, telephone, and other household clatter are unfit for study. The day is made longer and all work is completed here.

"Examinations follow the Morrison Plan. They are comprehensive and administered in units. Only complete mastery of at least minimal essentials is acceptable. The student may take as many examinations as he wishes if he pays for them. All films are available for use by individuals or small groups for review purposes. No marks, except passing marks beginning with "C" for minimal essentials, are entered on the records. Because students differ vastly

in their approach to learning, the College has no interest in spurring study by punishment or goading or placing a life-long stigma of failure on a student. It is interested only in competence.

"A comprehensive final examination is administered at the close of each course. Each student is given a copy of the final examination, with problem-details omitted, when he starts the course. Various types of electronic machines are used in administering and scoring tests and examinations. All are under the supervision of custodians.

"While the College has no lecturers as such, there is in each department a university-trained subject matter expert or professor for each 15 to 18 sections. He is specially selected for ability to work with and understand the needs of young people. He meets each section once a week in seminar fashion. He is the College authority in the subject field. In some courses the students meet an additional hour and select student leaders for additional discussion."

In response to the question as to whether the College made its own films, the president explained that the films were supplied by the National Institute for Audio-Visual Instruction. This is the Hollywood of modern education. It was first started by a grant from a foundation and is now supported in part by college subscriptions and membership and in part by government subsidy. The Institute employs more than 15,000 workers, 5,000 of whom are field workers in all parts of the world. It has constructed an entire city for its props and workshops. Hundreds of American colleges hold membership in the Institute. All materials such as laboratory equipment, films, textbooks, and examinations are nationally standardized and correlated.

A question was raised about having a lot of trouble with broken films. The president explained how, early in the program when the problem became serious, the Institute called in leading manufacturers of electronic and projection equipment and requested them to go to work on the problem. As a result, there is now never any trouble. In fact, films are never seen or removed from their cartridges.

Another member of the party said that *he* was surprised that television showings were not included. The president replied that every room is equipped with a small television projector to be used when needed, but that the questioner must note that television is only a transmitting device. "Merely to put a student in *one* room to see a lecturer in *another* room doesn't make sense. It was tried in 1955 and students found it unstimulating after the novelty wore off.

"We have a three-dimensional film which you should see," said the president. This showing used a light-weight mechanism to be brought before the

eyes and held in position by head bands. The mechanism was synchronized with the projector which showed right eye and left eye views alternately in rapid succession. A picture of rural Java with sound and color was remarkable. These films, the president explained, were used only for special subjects.

A member of the party remarked that he got the impression of inadequate contact with teachers. In reply to this, the president explained that the heart of the educational plan consisted of a staff of educational directors or counselors. "Each one is responsible for about 100 students with whom he constantly works to achieve their fullest development. He, like the subject matter expert, is well selected, well educated for his particular job, and is well paid. The educational director is to education what the general practitioner is to medicine. When a student doesn't measure up to the capacity indicated in the original diagnostic tests, the student isn't called lazy. The director accepts the responsibility of searching for causes. His is the responsibility of establishing and maintaining the personnel point of view. If the educational director does his work well, there are no failures."

Another member of the party declared that he was amazed at the use of so many machines. "Aren't you in danger of becoming slaves of the machines?" he asked.

For the first time in our interview I noticed a slight impatience on the part of the president. He asked what there is in the world which will not enslave one if one doesn't know how to use it. "The machine can give you either freedom or slavery, as you control it. Do washing machines and sewing machines enslave or free mothers?" he asked.

We now headed toward the president's office. Coming down the corridor was an attractive woman student who smiled as she approached. About her neck was suspended something like a small camera with which she toyed with her right hand while she kept her left hand in her coat pocket. After introductions and a brief conversation she continued on her way. When she had passed, the president explained that she had been made totally blind by an accident. Plastic surgery and glass eyes had restored her beauty. Then he startled us by saying that she now sees by means of an electronic device. Her education proceeds normally. Then he asked again, this time with a smile, "Is that slavery or freedom?"

The member of the party who had raised the slavery question was happy to drop it and asked how automation had affected the organization of the College. We had now reached the president's office.

"As I recall the period of the fifties," he said, "the biggest problem your accrediting associations had was to find a satisfactory method whereby each

institution could determine for itself the effect of its instruction."

"The clue to the solution of this problem was found in automation which ushered in the second industrial revolution. The heart of the principle of automation is the feedback. In an electronically controlled mechanism, the feedback is the device in a closed loop system which sends back information about the condition or product under control. It operates like a thermostat. The information serves automatically to correct any tendency to deviation and thereby keeps the processing operation in a constant state of equilibrium.

"In the old subject-centered colleges, the professor lectured, the students wrote notes, examinations were given, and students were passed or failed. If a student transferred to another institution to continue studies, his marks might be returned to the first institution. This meant little in determining the character of work in the first institution. If he went directly into career work, little if anything was done to find out the relationship of his years of education to his living. In these modern *student*-centered colleges, the measure of the quality of education of an individual lies in his personal and social behavior. For this college of 2,000 students, we employ 8 or 10 full-time, specially trained, social research workers. Each graduating class is studied as a whole and followed through the years. Effort is made to determine the extent to which the student's education is functioning —that is, the extent to which it has changed and enriched his life, the extent of his continued growth after leaving college, and his effectiveness as a citizen generally. These field workers have developed a remarkable facility in their work and are constantly improving their techniques. May I read from this list to show you the type and variety of the factors investigated: amount and character of reading; extent, variety and success of creative efforts such as composing of music, writing for publication, inventing, research; progress of the worker at his job; extent and effectiveness of participation in voluntary community service; extent and quality of leadership in organizations of all types; the character and extent of medical services needed; number of divorces and their causes; number of arrests and causes; amount of delinquency among children of the graduates; extent of alcoholism and mental illness; absenteeism; and so on.

All of this material is reduced to codes according to formulas and processed in electronic machines something like the old univacs. The results are studied with reference to the materials of the curriculum of the class in question and the prevailing social conditions. The findings are reported to the educational directors, the professors, and to the National Institute for

Audio-Visual Instruction. These reports, received from all parts of the nation, provide the information from which the textbooks, the instructional tapes and films, and other audio-visual materials are constantly revised." The president then pointed to a chart on his office wall showing in diagram how the Audio-Visual Institute, the college with its professors, and educational directors, and the research social workers constitute the closed loop with its controls.

"Have you any questions?" asked the president. One member expressed surprise at the number of uniformed custodians doing the work of teachers. The president noted that all jobs such as proctoring, distributing laboratory materials, operating projection equipment, supervising study halls, taking attendance, and guarding equipment can be done by custodians. Moreover, professional personnel are hard to get and cost much more.

As the time of our visit was drawing to a close, I asked the president if he cared to comment on American education as it stood in 1956.

"Well," he said, "you had many inconsistencies which amuse us now. To mention a couple, many of your universities operated two entirely separate teacher training schools. One, called the graduate school, concentrated on subject matter and would recommend a candidate who had never opened a book on principles of teaching. The other, called by some such name as the 'school for teachers,' might recommend a candidate with an amazing number of courses concerned with principles of teaching but only a meager smattering in subject matter.

"In your teachers colleges, you gave lip service to such principles as the curve of retention, the law of effect, and the doctrine of intrinsic interest, but only a small fraction of your teachers took them seriously. Many probably did not know how to apply them because your program for the training of college teachers was academic and not functional.

"We are often surprised at your apparent lack of understanding as to what should go on in a classroom. Let me read a few sentences from a history of colleges and universities of your period." He took a book from his desk and read, " 'Particularly in the undergraduate divisions of the subject-centered institutions there seemed to be general confusion about classroom procedures. Many lectured as if the students could not read, or as if duplicating machines, tape recorders, and even printing itself had not yet been invented. They repeated the materials found in any elementary text and only too often in dull monotone. Others lectured entirely on their dubious contributions to the subject. Some spent a great part of their academic careers clowning in a mis-spent effort to win the applause of the students. Another group spent the class time asking content questions like a

detective to see if the student had studied the assignments. This they thought was the discussion method. A few wonderful souls knew how to teach. They knew that nobody ever told anybody anything without first, somehow, arousing his interest.'

"You professed to have a great scarcity of teachers and yet you used your teachers only nine months in a year, and then set them adrift with unpaid vacations for three months out of each year. How could you expect to recruit and hold men and women of promise?"

Our time was up. As we hurried out I called to the president, "What is the structure over there? It looks like a half-finished building."

"That's what it is," he called back. "We need it badly but we can't get the appropriation to finish it."

The door of the time machine clicked shut. A few seconds of buzz in reverse and we were back in March, 1956.

The New Illiteracy*

NORMAN COUSINS

WHILE AT Bandung, I saw increasing evidence that a new phase had begun in the power struggle between communism and the free world. For what emerged out of Bandung was much more than an offer by Chou En-lai to negotiate directly with the United States on all issues relating to world peace. The big development in Bandung was that world communism announced in effect a change in its central strategy. The military showdown which had seemed so imminent suddenly shifted at Bandung to an entirely different sort of showdown.

The showdown now coming up in the world, I believe, is a showdown for the majority. Communism now aims within the shortest possible time to speak for the preponderance of the world's peoples. This does not necessarily mean that communism expects to achieve political control of the majority within the near future. What it does mean is that communism is making a big play for the broad-based support of the preponderance of the world's peoples. In this connection, Bandung furnished a dramatic example of Chou En-lai's ability to win friends and influence people. He did this not by political slight-of-hand or hypnotism, but by listening carefully to the position of other nations and then attempting to go a long way in their direction. Chou En-lai made a considerable dent at Bandung. He was able to convince delegates from Asia and Africa, many of them strong friends of the United States, that he could be talked to and reasoned with, and that China stood ready to advance the historic aspirations of the peoples of two continents.

Unfortunately, the American response to Bandung before, during, and after reflected both our lack of information about the area and our lack of sensitivity to the problem of such deep concern to the majority of the world's peoples. We seemed insecure and apprehensive in our approach to Bandung. Our friends in Asia and Africa

Dr. NORMAN COUSINS is the Editor of *The Saturday Review*.

* Dr. Cousins presented this address on March 8 at the AAJC Convention.

were troubled by what seemed to them to be an attitude both of petulance and pettiness. For the cry had gone up in America before the Conference that we would become the whipping boy at Bandung. It had been said that a lynching party in reverse was being prepared. We lacked the dignity and generosity that might be expected of the most powerful nation in the world. And when we invoked a technicality for not sending greetings to a historic meeting we lost stature in the eyes of our friends. In fact, many of our friends at Bandung had the feeling that America had taken them lightly. They were astounded that the United States should have been surprised at the extent of anti-Communism sentiment so eloquently expressed in the public sessions.

Finally, our friends at Bandung felt that they deserved some credit at least for the fact that Chou En-lai had believed it necessary to seek peaceful settlement of the Formosan issue, and for the fact that he was willing to enter into direct negotiations with the United States.

Hence, when the negative American reply to Chou's Bandung peace offer was announced, reflecting little awareness of the powerful undercurrents at Bandung, we made it possible for Chou to score his biggest triumph. He could say to the delegates in effect: "The Peoples' Republic of China is no obstacle to the peace. You have asked me to go more than half way. This I have done. But the United States, as you have seen, is not really interested in exploring peaceful approaches."

There is the matter of the responsibility of the nation's press in bringing about an informed public opinion on Asia and the coming showdown for the world public opinion. Editors may be handicapping themselves and doing a disservice to the public by insisting on certain standardized approaches to the news. In a sense, these approaches may actually be in the nature of shibboleths. Let me mention just three:

1. *The emphasis on the inside story.* Sometimes the big story is ignored just because it is out in the open. At Bandung, for example, the main story was subordinated in some cases to the secret battles that were supposed to have gone on in private. Yes, there were some fairly warm debates behind closed doors, but the big news was in full view and therefore, I suppose, not fully valued. To the extent that the historical perspective of a great event may be distorted by flashy diversions, our understanding of Bandung was weakened.

2. *The craving for a brawl.* The controversial or combative element in a story is often played up out of all proportion to its importance in the total picture. Again in the case of Bandung, some American journals made it appear that the most important news of the Conference was Prime Minister Nehru's supposed temper tantrum over the anti-Communist speech by Sir John Kotelawala. These journals failed to add that Prime Minister Nehru championed Sir John's statement concerning a possible peace declaration by the conference.

They also failed to point out that Mr. Nehru was primarily responsible for the final Conference condemnation of "all" forms of colonialism or imperialism after Chou En-lai registered his objection.

3. *The deadline phobia.* The nation's press should be reminded occasionally that news is determined by the event itself and not by a publication's deadlines. Thus, some of our major newsweeklies attempted to do a complete job on the Conference three days before the meeting ended. The magazines in question made it appear that the Conference was far more divisive than it actually was. And since the big events of the Conference came at the close, the rounded coverage which is essential to any understanding of important events just wasn't there. As part of this, one might also mention the fact that some stories retain their significance beyond the twenty-four hour period that is supposed to represent the life expectancy of a news event. Once again, with reference to Bandung, there is an important opportunity, it seems to me, for some publications which are not tyrannized by the appearance of immediacy to give the kind of long-range treatment that will provide a valuable basis for American understanding. One of our greatest resources is the kind of information that produces survival knowledge.

Automation–Bugaboo or Boon*

DWAYNE ORTON

HARNESSING the forces of nature and ingenuity to relieve burdens and increase the fruit of labor has been the desire of man from the first spark of flint to the latest application of thermo-nuclear energy. Yet in the current acceleration of the process, certain vested interests and some tired minds unite to cry bugaboo. Recent news scareheads raise the bogey, "Automation Putting Workers in Outfield" and "Automation Trend Forcing Small Firms to Merge." A Public Opinion Index Poll of 1,000 factory workers found three to one in favor of new machines and three to one against automation. A large corporation head says, "There are no such factories and no such machines, nor will there ever be."

Whether it be in protest over the speed of locomotion, in misreading the direction of social evolution and human welfare, or in downright vested interest in static forms of economic organization, the reactionary spirit of the Luddites rises out of the past to becloud the future.

Prophets of doom and fear-obsessed reactionaries are prescribing dire consequences from the increasing automation of production process; but it is a futile resistance. Nor do the irresponsible fiction-minded dreamers serve the movement of automation. They dream up "Rube Goldberg" mechanisms and pronounce the demise of manpower without regard for the realities of capital investment, increasing consumer capacity, or training requirements. In this field as in all others, we must keep our heads in the air and our feet on the ground.

The movement of which "Automation" is a phase is a vital force in the current of human development. In the mid-nineteenth century when Disraeli wailed, "In industry, commerce, and agriculture, there is no hope," Francis Wayland wrote of the bless-

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ings to the people, and labor in particular, from the expansion of economic institutions made possible by the application of power to productivity.

Without turning devil's advocate, we acknowledge the problem of the cultural lag imposed by continued automation. Our phenomenal successes in compounding the fruits of earth, sea, and sky into the ingenious devices of our technology raise an issue over the ability of our spiritual and social insight to control our technical creations. Thomas A. Edisor once identified and answered this issue. After reminding his hearers of his Bronx lighting experience with two dynamos out of balance, he said, "The dynamo of our God-given ingenuity is running ahead of the dynamo of our equally God-given humanity. . . . Put those dynamos in balance. Make them work in harmony as their great Creator intended that they should. For what man's mind can conceive man's character can control."

It is the position of this discussion that the growth of automation will improve the balance of human and material value in our industrial practice.

In building a case for the favorable influence of automation on social welfare, we do not disregard nor sell short the incomparable contribution made by non-economic institutions to industrial practices and the high standard of life in America. Home, church, school, labor union, and government have been significant factors in industrial enlightenment. However, these are extrinsic factors. They exert their pressure from outside the industrial institution. The category of influences in which automation appears is an organic part of the economic process. They are a leaven in the loaf. They are intrinsic factors which exert their influence from within the organism.

I

Against the backdrop of this thesis, let us consider the problem of communications in industry. With the vast expansion of American industry, we spread the operating areas wide on the chart and built more intermediate echelons of supervision into the pyramid of organization. The result has been the dislocation of communication between those who arrange, balance, plan, and manage the productive process and those who carry out the production. There are too many steps in the pyramid of organization to get communication direct. While automation will not reduce the total number of workers, it changes the nature of the line organization in such a way as to reduce the number of management levels. By drawing men off the processing line and utilizing them in maintenance, service, control, planning, and design functions, the organization spreads horizontally but the vertical levels are reduced. It is axiomatic in human communications—shorten the distance and reduce the

stations in a message chain and you improve the process of transmission.

What is more important to communication, however, is that workers in automated operations must be upgraded in the psychological skills of sensitivity, understanding, and responsibility. The control of multi-million dollar multi-operation machinery is far more demanding of the higher skills than the old-fashioned stationary engineer we dignified with a license. In the maintenance and service functions, this is imperative. The contrast between old line "millwrights" requirements and the modern servo-mechanism maintenance man is as great as the contrast between belts, pulleys, countershafts, and the watch-like precision mechanisms of control devices. Belt tensions and pulley revolutions bear little resemblance to milli-second timing devices and mirror finish tolerances.

The point of these contrasts for communications is too clear for emphasis. The quality of manpower required for automated processes automatically demands a higher type of personnel relationships and communication. A more sensitive degree of empathy, a more real feeling of belonging, a larger share in the work process are spiritual outcomes for higher work levels and the essential conditions for understanding communications.

The contribution of automation to better communications is through the intrinsic nature of automation in the industrial process. These gains from automation for communications come not through bulletins, house organs, films, lectures, or other extrinsic devices. They come because automation is an intrinsic part of the anatomy and physiology of the industrial body.

II

Now having touched on the contribution of automation to industrial human relations through the process of communications, let us note its effects on the status, dignity, and security of persons in industry. These are the hidden though most realistic satisfactions in work as in private life.

Here again the recognition of extrinsic and intrinsic factors is essential. Extrinsic satisfactions are important determinants of economic success. Higher wages, shorter work week, educational opportunity, higher standard of living, longer life, better working conditions, insurance, home ownership, leisure time—basic as they are—are external to the actual working situation. Cut beneath the surface manipulations of vocational well-being and intrinsic satisfactions are found to be the real goals of economic man. Self-determination, sense of worthwhileness, creative participation, status of respect, feeling of security—these are the vital conditions of occupational inner peace.

Now what is the relation of automation to such intangible qualities?

Certainly the reduction of burdensome toil, the shift of emphasis from manipulative to mental skills, the participation in enlarged units of work, the increased opportunities for managerial activity which accompany automation are adequate testimony. However, some prophets of doom feel that transitional technological displacement of workers will be so great as to require external policing of the tempo of transition to automation. They are not against automation per se. While admitting to the long range gains from technological advance in tools, they would regulate the rate and geography of change.

We do not deny the fact that change often requires intermissions while the scenery and props are shifted. Whether the shutdown is caused by changed model design, by the workers themselves to enforce labor contract changes, or by adjustment to improved tools of production—automation—dislocations occur. The first two are types of transitional displacement with which we are familiar. We are also acquainted with the third type. Technological change has been both bugaboo and boon. But whatever the past, there are interesting features of this industrial revolution which place a premium on good human relations.

For one thing, the fear of heavy unemployment does not reckon with the larger number of youths in longer schooling nor does it fully weigh the effect of a larger number in the population beyond the working age. While they are out of production, they are not out of consumption. Add the general population increase taking place and the sum provides the population base for an expanding economy.

Threats of shorter hours to keep full employment are meaningless. With increased productivity, shorter hours will be possible and the work may thus be spread among more workers. The leisure time thus provided creates more jobs to supply the facilities of recreation and pastime pursuits.

More important, however, are the intrinsic influences of automation on human relations. High level jobs mean higher investment in workers. Skilled operators and maintainers of automated processes are more expensive to get and to replace than single machine operators. Thus automation will accelerate the passing of the commodity theory of labor. It is becoming no more economical to lay off workers than to burn down facilities that are temporarily idle. The natural consequence of considering labor as a capital investment is to provide a steadier working year, and consequently, an intrinsically guaranteed annual wage.

The finest expression of good human relations intrinsic to automation lies in the fact that automation is only justified by expanding productivity. Automation from this view is a product of the peculiarly American principle of production for people. Automation goes hand in hand with high

production, low margin of profit, and widespread distribution. No room in an automated industry for the old-world economy of low production, high margin of profit, and limited distribution. Of all factors in the epic of the American economy, this one—production for people—is the chief and our most distinctive contribution to world economy. Automation is no sadistic principle by which a few profit at the expense of the many. It does not duplicate man's hand and brain. It releases man for higher vocational levels and frees him for more of life's satisfactions. He becomes progressively less the means and more the end of the economic process. At the risk of appearing lyrical, we quote the sharply applicable lines of Edwin Markham:

"We are blind until we see
That in the human plan,
Nothing is worth the making
If it does not make the man."

Automation — Bugaboo or Boon? The answer lies not in the technics of feedback, servo-mechanisms, computers, ingenious material handling, long range planning, and new concepts of finance. All these and more are germane to the answer but they are quantitative and relatively simple. The great unanswered questions lie in the qualitative equation posed by Edison: "Put those dynamos in balance. . . . What man's mind can conceive man's character can control."

To develop an economic statesmanship which makes economic power socially legitimate by organizing the processes of production and distribution in the service of the people is our primary task in management. In this the university, the union, the shareholder, the government, and the management profession must unite. Automation in work processes with its closed circuit feedback and self-regulating systems is but a physical analogy to a more difficult equally attainable self-discipline in the human aspects of the capitalistic system.

The manner in which the material side of the question is dependent upon the human comes to light in the sequel to the four lines quoted from Markham:

"Why build these cities glorious
If man unbuilded goes?
In vain we build the world
Unless the builder also grows."

Automation and Education*

ERIC A. WALKER

IN THE SESSION on automation, Dr. Dwayne Orton has shown that automation is really nothing new. Its evolution has been going on for years. He has shown that it is, in brief, a system by which we apply energy to solving problems, building machines, and providing services that human beings want. Thus, it contributes to our enjoyment and to a more satisfying life. In the words of Benjamin Fairless, automation is "only another little step in the slow and plotting progress of man toward a richer, fuller life and a better, freer world."

Mr. Silvey in his address has described some of the new and revolutionary changes taking place in business and industry, and he explained what automation means to the citizen as a consumer and a worker. He has shown that modern technology—automation—is the mechanism by which we can get more for less: more goods, more television sets, more food, more cars and better housing for less work than was needed in the past.

I want to speak about some of the mechanisms by which the engineers, scientists, and businessmen of the country have brought this hopeful situation into being.

Let us choose as our conversation piece the television set, because, rightly or wrongly, this has become a symbol of affluence and well being. It is often, perhaps too often, the focus of our family life. Now let us compare this television set with the crystal set of some 30 years ago, for this, too, in its day, was a remarkable achievement of science. It, too, represented a scientific "breakthrough," and the early crystal sets and their successors were also, for a short period, the center of interest and perhaps a focus of the family life. As today a television set is a mark of belonging for a family in a community and for a child among his friends, so was listening to early broadcasts and the logging of DX stations to the youth of the early twenties.

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However, let us not look at the television set only as a social symbol, but also as a scientific achievement and a mechanical device. What is in it? Approximately 35 vacuum tubes, hundreds of small elements called resistors, condensers and coils, a number of switches, transformers, and a picture tube. The whole complex device is assembled and encased in a beautiful cabinet and finally sold for about $175.00. For the average factory worker this represents about two weeks' work. In terms of labor, this is not a great deal more than the early crystal and regenerative radio sets cost. The resistors of this television set used to cost 75 cents apiece; now the average cost is a fraction of a cent. Vacuum tubes, which were five and six and ten dollars apiece now average less than a dollar. So, for the same effort today, we get good television programs instead of what, by present standards, was low grade radio. This is one measure of what technology has brought us. How has this miracle been accomplished? Simply by automation, by having someone devise a machine which can be manned by unskilled labor, a machine which can produce hundreds of resistors, condensers or vacuum tubes per hour almost automatically.

Let us look at our television set from still another point of view. What does it take to produce one? We know it takes materials—metals, minerals, etc. —which can be fabricated into the components inside the chassis. It takes copper, iron, zinc, lead, nickel, aluminum, coal, graphite, germanium, berillium etc., which first must be mined, purified, and fabricated into the proper form before they can be assembled. The acquiring of these materials and their preparation is a science and art which is well understood and can easily continue for many centuries as long as the supplies of minerals can be discovered. If by chance any one of them becomes extremely scarce or too expensive, we can develop substitutes or find some other way around our difficulty. Thus, the problem of finding raw materials may be vexatious but not insurmountable.

Now, machines are not run by manpower; they burn fuel. We need energy to do the mining, to run our factories, to fabricate the resistors and the vacuum tubes. This energy we get from fossil fuels: coal, oil, and gas. But even as warnings begin to spread that eventually these fossil fuels will run out, scientists discover almost inexhaustible reservoirs of fuel in the fission of some atoms and the fusion of others. Now there seems to be little probability that we will run out of stored energy which we can use to power our factories. Let us look again at the television set and note how it differs from the crystal set.

The most important difference is its complexity. As I said before, the modern television set consists of literally hundreds of elements or individual

parts tied together by an intricate system of wiring. The crystal set, on the other hand, was, in terms of our present knowledge, extremely simple. It contained only three important elements: a condenser, a coil of wire, and a cat's whisker detector. To these we only had to add an aerial and a pair of ear phones.

The mathematical concepts behind a crystal set were not very involved nor very difficult to understand. A mathematician or physicist can almost completely describe the behavior of a crystal radio set with two not very involved equations. Compare this once more with the television set and its hundreds of components. Literally hundreds of mathematical equations are needed to describe its operation, and, indeed, some of the things it does are so complex that we have difficulty handling them, at least with a high degree of accuracy, by present day mathematics. We have to resort to simplifications and approximations. It seems fair to say the average man can comprehend a crystal set. A single individual can be expected to invent a device as simple as a crystal set, but no one man today can devise, by himself, a machine as complex, involved, and difficult to understand as our present television set. The television set, like other big and important devices, is invented step by step, part by part, the contributions coming from literally hundreds of inventors.

This is the modern method of inventing. The Edison of today is many men, perhaps a whole science and engineering department. Edison, himself, with help only from artisans, invented the incandescent lamp. Revolutionary as it was in its time, it is by our present standards a relatively simple thing. It consists merely of a filament burning, without being consumed, at a temperature high enough to give off light. One equation describes its behavior. Edison invented the primitive gramophone. It, too, by our present standards, is a relatively simple machine. Such machines can be invented by one man. On the other hand, the jet airliners, the earth satellites, the rockets to the moon, the huge computers, and the traffic control systems we need and expect to get from our scientists and inventors in the next fifty years are much more complex. These will require the efforts of many men working as a team. This is the one great single characteristic of modern technology. We need a tremendous supply of scientific and technical manpower. In fact, we need a lot more than we are going to be able to get.

Up until the last war this country had plenty of scientific and engineering talent. In fact, it had more than it needed. As late as 1940, young men were advised not to go into the engineering profession because jobs were not plentiful. Now the picture is changing rapidly. Between 1900 and 1955 the total number of engineers in the country has grown from 40,000

to 450,000. The ratio of engineers to factory workers in 1900 was 250/1 and now is 50/1. Many industries have as many as one engineer for every ten factory workers. And now we find that, try as we may, we cannot produce enough of the creative type of engineers to fill the need.

This sounds like a dismal picture, and, indeed, I believe it is a dismal one. Why can I say with such assurance that we are going to need more scientific and technical manpower than we can get? Simply because not every young man or young woman is fitted to be a scientist, engineer, or technician. Not everyone is equipped to be a great musician, a great golfer, or a great statesman. In the same manner, not everyone is fitted to be a great scientist. It is my opinion that not nearly enough young people possess the inherent capabilities to fulfill the needs of our present civilization for talented persons.

Let us take a look at some of the things which are needed. What manner of man has the capability of becoming a competent scientist, engineer, or technician with the capability to do research and develop our automatic machines? I believe that there are five important factors.

1. *Mathematics.* Mathematics is a language of the scientist and of the engineer. It is by mathematics that he conducts his accurate, quantitative, and exact thinking. Without mathematics he can never adequately test a hypothesis or from a theory predict what may happen under different conditions. I do not think that any of you will argue that every man is able to get a proper command of the science of mathematics. So, in the first requirement we eliminate many of our students from further consideration.

2. *Communication.* The scientist and engineer of today must understand and must have a mastery of the English language. This may seem strange at first thought, but further examination makes it appear to be a quite logical requirement. Any scientist, in order to be heard, must be able to explain his findings to his fellow scientists in a language which they, too, can understand. If the scientist turns engineer, he quickly finds that any new plans he may make, any invention he may conceive, must be sold to his superiors, for they are to supply the money and the manpower for its execution. The engineer must further be able to explain his plans to those who execute them. He, like the composer, can only write music, and then hope that the technicians, factory workers, and managers will be able to translate it into a finished product. Without a proper command of the English language, the engineer cannot go far.

3. The engineer and scientist, in the fields which touch on automation, must have the capacity to understand the science of physical things. The laws of physics are also part of the language of the engineer. An understanding will help him evaluate ideas so he will work on those which are possible and discard those which are not.

4. Perhaps the most important requirement is that a student must have a true motivation to become an engineer or scientist. The reason is not obscure. A scientific curriculum is not an easy

one. It involves long, hard hours of study of abstract ideas: mathematics, physics, chemistry, optics, etc. These subjects cannot be mastered if interest flags, if the drive is not there. Might I add that the motivation must be the student's own motivation, not his father's or his uncle's, because, fortunately or unfortunately, the student himself must do the studying and he must learn to understand. No one else can do it for him.

5. A high level of intelligence is necessary to master the subjects which underlie a career in science and engineering. Creating new machines is not a profession for the lazy nor the dullard. We at Penn State have been led to believe that almost no one with an intelligence quotient of less than 120 can successfully complete a curriculum in science and engineering.

Now, let me not lead you astray. So far, I have described only the scientists and engineers. In fact, we have been talking about a particular type of scientist and engineer—those who are going to do the research, the development and the invention of our new machines and processes. Unfortunately, the job is not finished when a machine has been designed and invented. It needs further attention by other intelligent people. Someone has to devise the factory in which it is built; someone has to set up the manufacturing methods and test the machine part by part, assembly by assembly, and finally test the whole finished product. Very often a general purpose machine has to be changed and adapted to fulfill a particular need. Machines have to be sold, maintained, and repaired. Operators have to be instructed in how to use them. There are many jobs which are concerned with science and engineering and which are within the fields of science and engineering which do not require the creative talent of inventors and designers that I have been speaking of up until this time.

One way to get enough people is to train others to go into maintenance, sales, operations, production, etc., and relieve the scientific types of this task. Indeed, many industries are making strenuous attempts to do this, and gradually the ratio of engineering aides and technicians to professional engineers is rising. Many of our better laboratories now employ one or two such aides for every creative engineer and scientist.

Luckily, the basic educational requirement for the aides and technicians are not as high as they are for engineers. In this area a man can get along without a command of the English language if he is satisfied to let his superior do this part of the job for him. Perhaps he can get along without an adequate understanding of mathematics if his superior can supply this for him. Perhaps his general level of intelligence can be lower if he is willing and able to take guidance and more detailed instruction. This solution, therefore, then demands that a whole new group of people be educated in the area of science.

I see three tasks which we might ask the junior colleges to undertake. The first is to educate and direct those young men and women who are peculiarly fitted for careers of scientists and engineers into channels which will make fullest use of their talents. This will require a firm grounding in science and practice in rigorous step-by-step reasoning. Then, they should be directed into professional and post-graduate curriculums which will fit them for jobs in creative science. This is a cooperative job for both of us.

The second task is the training of engineering aides or technicians who can aid and assist engineers and scientists in their jobs. These are young men and women who lack some of the qualifications necessary for real inventive-creative engineers but who wish to work in the field of science and engineering, with scientists and engineers. In this way, they can contribute to our progress and also live happy and productive lives.

There is a third task for the junior colleges. The purpose of an automatic machine is to put someone out of work by taking over a job which is menial, boring, and repetitive. However, for every menial job that is abolished, a new job which requires a more highly developed skill is created. We are going to have to retrain people continually. Workers must learn to undertake more demanding and usually more satisfying and more remunerative jobs than they have held in the past. Such work is informal, of a short-course nature, and intimately connected with the needs of the community. The community colleges, with their well-grounded community roots and their flexibility, are well fitted to this task.

Automation will bring great benefits to all of us. To many it will bring new tasks. The junior colleges should find new challenges in education to help the professional schools identify and train inventive scientists, to train scientific aides, and to retrain the thousands who will now have a chance to use their maximum talents.

Tests as Aids to Administration and Counseling in Junior Colleges*

HAROLD SEASHORE

EACH OF US would have little difficulty in describing a half-dozen different kinds of junior colleges, some so different from the others as not to have much in common. My discussion of psychological and educational measurement in junior colleges will center on this fact of diversity.

One junior college conceives its purpose to be the education of its students in programs similar in level and content to those of standard baccalaureate colleges. A high percentage of its students continue in other colleges and universities. Those who do not continue have a good dose of general education with little or no specific vocational preparation. This college has a problem of selective admission akin to that of any college with similar standards and is interested in the usual college qualification and placement tests.

Another junior college is similar to the one just described, with the important difference that it cannot be selective. Responsible to a particular supporting group and limited in resources, it offers a curriculum of standard academic fare to a relatively unselected student body. A modest percentage of its graduates continue in other colleges, mainly in the less demanding ones. It offers few integrated vocational curriculums. To meet its responsibilities to its supporters and its students, a somewhat different testing program is needed.

The third type of junior college is a technical institute. This college admits a limited number of highly qualified students to a smaller number of technical curriculums of a terminal nature. It needs tests as aids in selective admission both as to level and as to the differential requirements for such diverse

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* Dr. Seashore gave this speech at the Thirty-sixth Annual AAJC Convention.

curriculums as radio engineering, dental technician, commercial arts, and accounting.

A fourth junior college may be described as a comprehensive community educational center. Anyone can enter if he has a high school diploma representing any level and pattern of ability and preparation. Some students enroll with the idea of moving on to another college, some prefer the terminal but demanding technical courses, while others seek the one- and two-year trade specialties which are available to them.

All are junior colleges—but how different. Different as to educational purposes, as to selectivity of students, as to variety of programs, as to supporting constituency, and as to socio-economic and geographic origins of their students. Around this fact of diversity I would now like to develop three points which might be helpful in planning for better utilization of existing psychological and educational tests and the blueprinting of other tests not yet constructed.

1. *No one testing program can serve all junior colleges.* Their purposes, students, and programs are too varied. In one, the selection process is paramount. Another has no problems of selection, but should use tests to channel students, by administrative fiat or by counseling, into different levels or types of programs.

Another, if sufficiently large, may be able to offer sections in various subjects; placement tests can facilitate the assignment of students in English, mathematics, sciences, etc. Another college emphasizes its role as a place where students can "find themselves" by exploration; here academic and vocational counseling becomes a central concern from the first day on.

Selection, placement, and counseling—these are the common uses of tests. Each junior college will do well to explore what testing program will best serve its needs. Negatively speaking, junior colleges should avoid adopting a testing program just because it is fairly common in standard arts and science colleges.

2. *Most junior colleges, with their mixture of general and vocational courses, many of a terminal nature, need testing programs which cover a wide range of abilities.* Testing to appraise each student's general scholastic ability is important for junior colleges, but for most of them this is not enough. While it is true that junior colleges have many academically superior students, it is a simple fact that in many of them the students represent a much broader range of talent than is typical in the conventional college. The non-selective community institution may even have a considerable number of its members from the bottom quarter of the high school classes. At the risk of over-simplifying, we might say that a distinctive role of junior colleges is to provide post-high school education for young adults whose measured abilities

place them in the middle half of the range of abilities. Educating this middle fifty per cent might well become the primary focus of the junior colleges. The critical need for discovering and educating men and women of high-level talent is apparent. Organized programs of discovery, motivation, and financing of our superior human resources are in full swing. Our national existence depends upon such efforts to get a high percentage of our upper quarter and upper tenth students to the baccalaureate degree and beyond.

But for every Indian chief we need some well-trained warriors and competent tribal citizens. Their advanced training can be shorter and less comprehensive than that of the chiefs.

For every Ph.D in nuclear physics, we need many first rate laboratory aids. For every master engineer in the research laboratory or production line, we need dozens of competent technologists. For every top-drawer business executive, we need men in staff and line who can carry certain loads with effectiveness. For every agricultural scientist, we need many farmers. For every physician, we need a corps of medical technologists. In fact, as we upgrade the training and responsibilities of the superior human resources, we need also to develop a sound pattern of selection, training, and utilization of the great middle class of the intellectual continuum.

National policy dictates that more and more of the middle fifty per cent of our population should seek further education, but not necessarily in the traditional four-year pattern. The junior college, in its many forms, is the natural upward emergent from the secondary level trade and technical school. In the six-year pattern, grades nine to fourteen, a better job can be done, both intensively as to specialty and broadly as to general and cultural education.

If we grant that the need for terminal, two-year vocational and general education will increase, it becomes evident that our responsibilities to select and classify students properly with respect to curriculums will increase. Since this is a democratic society with respect to vocational choice, our student counseling services must also be expanded. We will want to introduce variety into our testing programs so as to embrace the whole range of abilities which are deemed important in making proper educational and vocational choices.

Let me illustrate. One junior college dean told me, with full cognizance of his problem, that his testing program consisted of the ACE Psychological Examination and an English placement test. His was truly a community junior college. The few students entering the academic curriculums and heading for senior colleges were no problem to him and the testing program was helpful. But, most of

his students chose the numerous two-year technical and specialty programs with their varying demands on different abilities. Many others elected to pursue the trade programs with a minimum of academic content. Since he literally met his students first on registration day, he could only sort them out on the basis of limited information and expressed interests. The wastage of human resources and of community taxes was obviously considerable.

The situation called for a broadly conceived program of measurement, with the tests preferably given well ahead of registration day. The need was for tests yielding differential information to permit him and his colleagues to make wise administrative decisions regarding each student and to help each student consider his own educational and vocational choices on a sounder factual basis.

It is evident that richer and more varied testing programs are required for the expanding junior college universe.

3. *Psychometric research in junior colleges should be expanded.* We can adapt many of our measurement findings based on secondary school populations and vocational groups to the junior college situation. The standard academic predictors which are useful in colleges generally will be useful in junior colleges with similar student bodies or in the academic sections of multi-purpose institutions. But experience has shown that validity of tests is specific to the situation. The current lack of good data calls for cooperative and substantial studies right in the junior colleges. Colleges with similar structures and problems could pool their projects and share research staffs and facilities. If we recognize the need for diversity of measurement and can agree on the main features of a good blueprint for research, we should be able to accomplish sound research with economy. The major test research organizations will cooperate with junior colleges in this important developmental work. The development of appropriate tests, well-validated for the special educational purposes of the junior colleges, is our common goal.

To illustrate these ideas, let me present some profiles of abilities of some young men and women. These profiles are based on the *Differential Aptitude Tests,* but the points I am about to make about each one could be deduced from profiles derived from other equally well-developed tests. These sketches are not evidence of the validity of the tests; they are only pictures of real people who do not look alike in their abilities. If we can learn from research how these ability patterns relate to what we offer in our junior colleges and to what various vocations demand of those who enter them, then we shall be in a better position to serve both our students and society through our administrative acts and our student counseling.

Selection, placement, and counseling—these are the major uses of tests in all education. We can do a better job in the junior colleges if we recognize:

(1) the need for diversity of programs,

(2) the need for differential measurement of student achievement and abilities,

(3) the need for more research to develop efficient and appropriate tests.

PROFILES OF STUDENTS

Tested with the Differential Aptitude Tests To Illustrate Diversity of Abilities in Relation To Selection, Placement and Counseling of Students.*

The Tests	*Percentile Ranks† of Five Students*				
	Mary D.	Ellsworth N.	Grace S.	John X	John Y
Verbal Reasoning	*67*	*86*	(10)	55	55
Numerical Ability	*75*	48	(30)	60	60
Abstract Reasoning	*80*	44	43	50	50
Space Relations	*90*	40	*79*	*85*	(30)
Mechanical Reasoning	(20)	36	*80*	*85*	(30)
Clerical Speed and Accuracy	36	(14)	52	40	*80*
Language Usage:					
1. Spelling	52	*73*	(23)	(35)	*65*
2. Sentences	*73*	*93*	48	(35)	*65*

* Bennett, Seashore, and Wesman. The Differential Aptitude Tests. 1947 The Psychological Corporation.

† Percentile ranks 65 and over are *italicized* and those 35 and under in parentheses.

COMMENTS

Mary D.

Grade 12. Under counseling gave up idea of medicine. Accepted plan to be a laboratory technician or medical secretary.

Ellsworth N.

Grade 12. Local industrialist encouraged engineering, a poor choice considering his abilities. Verbal and language abilities and expressed interests suggest post-high school training for business field in a junior or senior college.

Grace S.

Grade 11. Certainly not college quality, nor a good candidate for secretarial training, her choice at time testing. In a community junior college, a curriculum should be available to capitalize on her strong ratings on Space Relations and Mechanical Reasoning.

John X and John Y

Based on real cases, these two simplified profiles together illustrate the role of diversified measurement. The two Johns are alike in verbal and numerical rating and this rating is marginal with respect to success in a standard baccalaureate college. If these two men want post-high school education, they might consider two-year terminal programs. This decision made, what courses should they choose? Their rankings on the last five tests in the profile would be helpful facts in counseling. Alike in *scholastic* predictors, John X and John Y are different in other abilities.

The Background of Standardized Test in Colleges*

ROBERT L. THORNDIKE

I SEEM TO be cast, today, in the roll of an historian of the standardized testing movement. I had never thought of myself as an historian. I visualize the keeper of the tribal legends and rituals as a venerable gray beard whose memory goes back to the beginning of time, and I have not felt fitted for the part. But a few weeks ago, after a dinner-table discussion of the current crop of "rock and roll" my 13-year-old informed me: "Pop, you're a pre-historic." So maybe I am properly cast in the historian's role.

As a matter of fact, one of my earliest recollections is of being hauled down, sleepy and protesting, to serve as guinea pig for the demonstration of the Stanford-Binet (I didn't identify it as such at the time) for a graduate students' club. With that early start, I probably took more tests during my youth and developed more "test-wiseness" than anybody on the Atlantic seaboard. So I have known standardized tests, man and boy, for forty years, and should be qualified to introduce you to them.

Though the first roots of the modern testing movement can be traced back to the beginning of the present century and even beyond, the impact of standardized testing on collegiate education dates from World War I. The widespread testing of college-age men with the Army's group intelligence test—Army Alpha—had immediate and widespread impact. Army psychologists returned to their academic posts all over the country, bringing back with them wild enthusiasm for, or a deep curiosity about, intelligence testing. Army Alpha was tried out in many schools, and other tests were prepared which were more specifically adapted for the entering college student. Shortly after the war, E. L. Thorndike prepared his Intelligence Examination for High School Graduates which was used for many years in the admission screening at Columbia and at Stanford, as well as

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* This is the text of a speech presented at the AAJC Annual Convention.

in other institutions. Toops developed the Ohio State University Psychological Test, which has gone through progressive revisions and adaptations but which has been now used in the colleges and universities of Ohio continuously for more than 30 years.

In 1925 the College Entrance Examination Board yielded to the growing pressure and interest and made available an objective Scholastic Aptitude Test which could be required by those of its member colleges who desired it. Starting on a relatively small scale, this test has grown in importance in the College Board scheme of things until it now represents the heart of its college entrance examining program.

The American Council on Education got into the act in 1924 when the Thurstones brought out the first edition of the ACE Psychological Examination. Over the following 30 years this became the most widely used of all tests for college freshman testing programs. It was a short test that could be given in a single period, yielded two separate scores—one for quantitative and one for linguistic ability—had strong organizational backing, appeared in new forms each year, and supplied comparative statistics for many types of collegiate institutions; so its wide popularity is not surprising.

Shortly after the tests of general intelligence or, more properly, scholastic aptitude, made their appearance, the professional schools got interested in selection tests for their students. As early as 1919, Thurstone published aptitude tests for use in engineering schools, and not long thereafter E. L. Thorndike provided tests that were used for admission to the Columbia Law School. Moss burst into print in 1927 with a Medical Schools Aptitude Test and a little later with an Aptitude Test for Nursing.

These professional aptitude batteries were each identified by the name of the specialty to which they pertained, but there remained a few carping sceptics who felt that the name was about the only respect in which they differed. Like some of the aircrew tests we used during the last war, which had validity conferred upon them by the picture of an airplane on the cover, the professional aptitude batteries were given the form and semblance of their own special professional affiliation. But even today the suspicion lingers that the difference between the batteries is more in name than in substance and that each is at heart a general scholastic aptitude test.

If World War I may be thought of as ushering in the general scholastic aptitude test, World War II may be thought of as god-father to the classification or differential aptitude battery. Though the theoretical rationale for a battery of specialized aptitude tests had been well developed in the thirties and even the twenties; though the scholastic aptitude tests of the College Board and The American Council

on Education had provided separate quantitative and verbal scores; though Thurstone had produced his Primary Mental Ability Tests before that time, it was only after the World War II experience with classification and differential assignment of personnel on the basis of a battery of specialized tests that the concept of a differential test battery became widely accepted. (Whether the relationship was in any sense causal, or merely sequential is, of course, open to debate.)

In 1947 the Psychological Corporation produced the Differential Aptitude Tests, and in the years since then some half dozen elaborate classification test batteries have been offered to the test-buying public. By and large, the classification test batteries have been pointed at the guidance counselor in the secondary school, rather than at the college audience, but the appraisal of specific abilities may well be of interest to the junior college as well as to the secondary school.

The basic idea underlying the differential aptitude battery is that abilities are specialized. If we want to be really helpful to either student or employer, we need more specific information than can be represented in a general scholastic aptitude score. We need specific information on verbal, numerical, mechanical, spatial, reasoning, and other relatively specific abilities. This more specific information presumably makes possible more specific guidance as to *which* course of study or *which* job is most compatible with the individual's ability pattern.

This is the theory of it. Whether the theory works out in practice is something else again. Actually, different academic subjects appear to be much less differential in their demands than the enthusiastic tester would like to believe. A good measure of verbal ability seems to be the best predictor of success in almost any academic subject — including the sciences — and even does a pretty good job for mathematics. Whether differential abilities will really differentiate success in different jobs is still an open question. At the moment we are engaged in following up 15,000 men tested with an extensive battery during Warld War II to try to find the answer.

So far we have talked about aptitued measurement. But while these tests were multiplying, the ferment of object testing was at work in other areas as well. One of these was the field of personality and adjustment. Here again, the military needs of World War I provided the initial stimulus. A Personal Data Sheet developed by Woodworth and Mathews as a quick screening device was the spiritual ancestor of a whole host of personality questionnaires and inventories. These proceeded by presenting the respondent with an extensive catalogue of statements about feelings and actions—"I often feel just miserable," "I take the lead in social gatherings," "I cross the street to avoid meeting

people"—and eliciting his endorsements of the ones that apply to him. These instruments have been developed in great diversity and with a good deal of ingenuity, including special controls built into the instruments to identify prevarication and self-deception, but still they have not been shown to have any great validity in collegiate groups. At best they appear to represent rough preliminary screening devices suitable for identifying individuals who might profit from more extensive counseling.

Somewhat more fruitful have been the appraisals of interest and value patterns based upon the individual's self-report of his likes and aversions. Work started in this field at Carnegie Tech shortly after the first world war, but the field was soon dominated by the Strong Vocational Interest Blank, which the author first brought out in 1928 and to which he has devoted a lifetime of research. The interest inventory codifies and organizes a person's likes and dislikes. In a sense, it doesn't tell him anything fundamentally new about himself, for all it is doing is reflecting to him his own statements of preference and rejection of a wide range of activities. But the selection of items to comprise the test and the standardization of the test on different occupational groups makes it possible to organize and interpret individual responses in terms of jobs and vocational plans.

While the testing movement was overrunning the domains of ability and personality appraisal, it was also making a two-pronged assault on the citadel of achievement testing—the appraisal of course achievement and general level of academic competence. One prong was the assault upon the instructor in his own testing. With William McCall, G. M. Ruch, and others directing the fire, a barrage of exhortations were released admonishing the teacher to mend the error of his ways, reject the subjectivity and unreliability of essay examinations, and turn to the objective and consistently-scored objective test item. Driven partly by a sense of guilt at their past sins and partly by the practical pressures of mounting enrollments, many were willing converts.

At the same time, the preparation of commercially distributed standardized achievement tests, which had gotten under way in elementary education in the decade before World War I, was extended up to secondary and collegiate education. Dr. Ben Wood, Director of the Columbia College Bureau of Collegiate Educational Research since 1925, spearheaded the movement through constructing tests in his own organization and through his direction of the Cooperative Test Service, established by the American Council on Education in 1930 as an agency to produce and distribute standardized achievement tests of high quality at the secondary and collegiate level.

Though many of the first commercially distributed tests were hurriedly contrived and inadequately standardized, and seemed to have been produced with an eye to turning a fast buck, the Cooperative Tests enlisted a high level of professional insight in defining the scope and content of the examinations and of technical skill in developing the test exercises.

Concurrently, another group making important contributions to examining technique at the collegiate level were the examiners at the University of Chicago. The introduction of comprehensive examinations in lieu of course requirements as evidence of achievement of competence in the areas of general education placed an exceptionally heavy burden of responsibility upon examinations. The staff of the Board of Examiners rose to the challenge with a wide variety of testing devices designed to appraise abilities to understand, apply, and interpret the materials of instruction, rather than merely to reproduce factual knowledge.

Under Ralph Tyler as University Examiner, this concern with defining adequately the whole range of objectives of instruction and developing techniques to appraise them continued. This emphasis has received the label "evaluation," as distinct from "measurement." The term implies a centering of concern on determining what is to be appraised and broadly appraising the whole range of significant outcomes, rather than on the form and mechanics of measurement as such. This work found expression in the Eight Year Study of the Progressive Education Association before the last war and is reflected in the Cooperative Study of General Education since then.

I have tried to rough in with a broad brush the main outlines of standardized testing as this effects the junior colleges. The picture is necessarily incomplete, and like one group of personality appraisal devices that I have mentioned, it is undoubtedly a projection of my own biases and predilections. I must trust my colleagues to correct these distortions as they look at measurement in the today and tomorrow.

The Soviet Challenge and the United Nations*

F. O. Wilcox

We live in a time charged with dramatic developments. In such times it is especially hard to grasp the thread of history. It is even more difficult to determine which developments are transitory, which more permanent.

The Change in Soviet Tactics

We have witnessed in recent days an event of unusual significance. We have seen another Leninist zigzag of Soviet tactics. The Soviet twentieth Congress has rewritten some of the Stalinist dogma. The full import of the decisions taken by the recent Congress will become clearer as Soviet policy evolves in the days ahead.

The change in Soviet tactics is, when you think about it, a logical development. The old line of violence and threatened Soviet military might has been neutralized by the free world's defensive build-up. So the Kremlin has turned a new face to the world. No longer is war between the two systems considered "inevitable." The "frightful collisions" Lenin predicted between the two systems do not have to take place, Khrushchev has told us, because the victory of communism can be achieved without violence—unless, he was careful to add, the "exploiters" are unwise enough to resist their own extinction.

But in general, the termite is to take the place of the battering ram. There will be more emphasis on smiles and promises and less emphasis on brute force. The goal remains the same: the collapse of the very foundations of non-communist society. Thus, the Kremlin has undertaken a new Soviet economic and political offensive. Political cooperation is being sought with left-wing Socialists, formerly the target of Soviet abuse. Great stress is being placed on trade and economic assistance. This "new look" is being directed by the leaders of the Soviet monolithic state who control with an iron hand the people, the resources, and the foreign policy of the Soviet Union.

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It poses a sharp threat to the United States and to the entire free world, both inside and outside the United Nations. It is a challenge which must be understood and met.

The new look in Soviet tactics became manifest at the Geneva Conference of Heads of State last July. There Soviet leaders spoke in a spirit of accommodation towards the West. They spoke of an era of peaceful and competitive co-existence between the free and the communist world. They expressed a desire to reduce international tensions.

The more hopeful atmosphere engendered at Geneva was reinforced by a series of Soviet actions taken both prior to and after the Geneva Conference. In May, 1955, the Soviet rulers, after ten years of painful negotiations, finally signed the treaty with Austria. This was followed by the remarkable visit of Soviet leaders to Yugoslavia to make amends for past deeds. The Kremlin established diplomatic relations with the German Federal Republic. It evacuated its military base in Finland.

The new look also became apparent within the United Nations. In the General Assembly last fall, the Soviet tone was, for the most part, more moderate, less contentious. Finally, they partially lifted their barrier to the admission of new members, for a price, of course. In their speeches they stressed the need for economic aid to underdeveloped countries. They made clear their intention to play a stronger role in the United Nations Specialized Agencies, some of which they had joined or rejoined only a short time before.

This does not mean that international communism has given up its ultimate ambitions or that it is not still the enemy of free governments. As Secretary Dulles said recently, the Soviets "have subordinated those elements of their old creed in the hope that, in a new garb, they could still pursue conquest."

Witness the words of Mr. Khrushchev speaking to the Supreme Soviet on December 29, 1955: "If certain people think that our confidence in the victory of Socialism, the teaching of Marxist-Leninism, is a violation of the Geneva spirit, they obviously have an incorrect notion of the Geneva spirit. They ought to remember once and for all that we never renounced and we will never renounce our ideas, our struggle for the victory of communism."

Witness the adamant Soviet refusal to permit the unification of a free and democratic Germany, and the renewed Soviet efforts to destroy NATO and other Western defensive alliances.

Witness also the arms shipments from Czechoslovakia to Egypt. This cannot be explained away as a simple business deal. In communist countries the state controls all such transactions and they are a part of foreign policy strategy.

Witness, finally, the Soviet "goodwill" mission to India, Burma, and Afghanistan. On the one hand, the Western powers were subjected to vitriolic verbal attacks; on the other, there were Soviet proffers of trade and aid to the Asian countries visited.

It is important to note that this political and economic offensive was being pursued in Asia simultaneously with conciliatory political tactics towards certain strategically important countries in the West. A pattern clearly emerges: first, the USSR is conducting a holding operation against Western Europe while seeking to destroy NATO; second, it is seeking to expand its economic influence in the countries of the Near East, Africa, and Asia; third, it is attempting to utilize the United Nations and the specialized agencies in support of these objectives and in order to create the image of a peaceable, cooperative Soviet Union.

WHY SOVIET TACTICS HAVE CHANGED

Why have Soviet tactics changed? Has the strength of the free world made them necessary? Have past Soviet foreign economic policies been a failure? I would answer both questions in the affirmative.

First, free world strength. After the second world war, a new threat of international communist expansion developed. It was turned back in Iran, Greece, Turkey, and Korea only by prompt and determined free-world action. To deter further Soviet threats of aggression, nations of the free world joined together to exercise what the United Nations Charter calls "the inherent right of collective self-defense." Last year, in the face of the strongest Soviet threats and political maneuvers, the German Federal Republic became a full partner in the North Atlantic Treaty Organization. The change in Soviet political tactics stemmed from about this time. Soviet rulers obviously concluded that their approach to the non-communist world must be changed. A new route to the old destination was needed.

Second, past failure of Soviet foreign economic policies. After the second world war the United States shouldered a major share of the task of rehabilitating the war-torn countries. In the United Nations we championed the establishment of the specialized agencies and have consistently given them strong financial support. We took the lead in formulating programs of technical assistance to speed the economic development of underdeveloped countries.

By contrast, the Soviet Union stripped the vanquished and provided assistance only to its satellites or fellow communist countries on its own onerous terms. In the United Nations, until very recently, the USSR gave little, if any, support to the specialized agencies or the Technical Assistance Pro-

gram. Instead, it attacked them as tools of Western imperialism. This negative attitude did not go unnoticed and did not help the USSR in its efforts to penetrate the underdeveloped countries.

The failure of old policies is not the only reason for the Soviet new look. For one, there is a new leadership since the death of Stalin which may be more alive to non-communist realities and therefore convinced that new tactics are required to reach the old goal of a communized world.

For another, the hydrogen bomb means that virtual disaster rather than possible victory may be the new price of aggression.

For a third, the Soviet economy may now, for the first time, be in a position to provide goods and technical services for export. In many cases, this will mean withholding them from their own people.

Whatever the reasons for the changed Soviet tactics, they constitute, in effect, a shift in foreign policy. A recent communist publication describes them as "prolonged co-existence, and economic competition between the two systems."

This new strategy is the challenge. We must take it seriously. It is not sufficient to say that the Soviets may have seen the errors of their own ways. We must look forward and be prepared to meet this and other Soviet challenges for the foreseeable future.

WHAT THE SOVIET CHALLENGE MEANS TO THE UNITED NATIONS

I am particularly concerned, of course, with how we meet this challenge in the United Nations. There are sixteen new members in the United Nations. Many of them are newly independent, proud of their sovereignty, and anxious not to become committed to any great power. They have swelled the ranks of the large group of underdeveloped nations which constitutes a majority of the United Nations. They want to acquire rapidly the material attributes of developed countries. "Industrialization" has become a magic word. People of Asia and Africa, and of Latin America as well, hope to find in quick industrialization a cure for most, if not all, of their domestic, economic, and political problems.

In Asia and Africa, the new Soviet economic campaign has taken on various forms. It includes the barter of surplus arms in the areas where tensions were already high. There are also purchases of agricultural surpluses. The Soviets have given great publicity to these purchases. They have not made known, however, that some of these commodities have been re-exported to markets which would normally have been supplied by the original sellers. The Soviets have also made low cost loans in increasing numbers to countries important to them strategically. They are flooding the underdeveloped areas with offers of experts,

equipment for training centers, invitations and fellowships for travel and study in the Soviet Union.

In the expanded United Nations, the USSR can be expected to champion the demands of the underdeveloped countries for a substantial United Nations Fund for Economic Development, although it remains to be seen whether they would be prepared to contribute much to it. Indeed, the world may soon find that they are long on promises and short on deliveries.

In certain of the Specialized Agencies the Soviets have also made an about face. The Soviets have in the past ignored, opposed or sought to frustrate the economic and social activities of the United Nations. They ignored membership in the International Bank, the International Monetary Fund, the Food and Agriculture Organization, the International Labor Organization, the UNESCO. For a short while they did belong to the World Health Organization, but they withdrew early in 1949.

During this period the USSR was not content with merely boycotting the specialized agencies. They were the targets of Soviet attacks. The Soviets rarely missed an opportunity, for instance, to describe the International Labor Organization as "an instrument of capitalist employers to enslave the workers of the world." UNESCO they described as an instrument of "American cultural imperialism."

Now this changed. Since the death of Stalin the USSR has rejoined the ILO and UNESCO. They are renewing their membership in the WHO. They have contributed 4,000,000 rubles a year or—at an artificially imposed rate—the equivalent of $1,000,000 a year for the past three years to the United Nations Expanded Technical Aid Program.

What does all this mean for the United States? I remind you, of course, that there is nothing new about the United States engaging in programs of economic assistance to the less developed areas. We have provided billions of dollars over a period of years. In doing so we have strengthened the foundations of the free world, which is clearly in our national interest. We have no imperialist designs. We are simply helping other countries to maintain their independence and to strengthen their free institutions. It is a compliment to our programs that the USSR is now copying them. Current Soviet activities in the Middle East and Asia merely underline the importance of what we have been doing.

To meet the Soviet economic challenge two things are essential: greater flexibility and greater assurance of continuity in dealing with economic aid problems. Without these two elements we incur serious risks of a rigid policy which will not be able to cope with the variety and shifts of Soviet attempts at economic penetration.

We can continue and possibly expand our support for both the United States bilateral aid and the multilateral economic programs of the United Nations. From a dollars and cents point of view, economic and technical aid through the United Nations is less costly to us in many instances since it spreads the burden over a larger number of countries. Moreover, the multilateral approach may often be found more acceptable for political reasons by some of the underdeveloped countries.

Much is being done in the field of international financing through the International Bank for Reconstruction and Development and the Export-Import Bank. And now that Congress has approved our membership in the International Finance Corporation, we look forward to increased efforts to encourage the flow of capital to underdeveloped countries. The early ratification of this international corporation by the Congress has gone a long way towards stimulating other countries to ratify. We hope this new instrument of international cooperation will begin to function late this summer. Meanwhile, we must continue, as we are now doing, to review our economic programs, both within and without the United Nations, to make them as sound and effective as possible.

We must maintain our leadership in the specialized agencies. This is especially important in view of the new Soviet interest in these agencies. I do not agree with those who are apprehensive that Soviet membership will mean communist domination or corruption of the specialized agencies. There are those, for instance, who think we should quit the International Labor Organization because the Russian employer delegates are in reality government officials and not employers as we use that term. Nothing could be more injurious to our national interest than for us to walk out and leave such organizations as the ILO to the Russians. The overwhelming majority of both the employers and the workers represented in the ILO are on the side of freedom.

Soviet participation in such organizations as ILO and UNESCO serves to bring into the open the fundamental differences which separate the world of the free and the Soviet world. We need not fear such comparison. I would be the last to claim that these organizations, or any other human institutions, are without imperfections. But they serve our interests, and we are constantly alert to improve their programs. We must actively be represented in these agencies with our allies to champion the cause of free men.

WHAT THE COLLEGES AND UNIVERSITIES CAN DO

Of course, this new Soviet challenge cannot be met alone by government action. It is a long-range problem. It must have the continued attention and

understanding of our people. In developing such understanding, the colleges and universities have a vital role to play.

I believe the colleges should encourage by every means possible an interest in, and understanding of, world affairs. I do not mean merely the traditional study of ancient and European history but also the history of the newly independent and resurgent areas of the world. They are on the march toward political and economic equality with the most advanced countries. Your students were born into a world in which Western concepts were dominant. They will exercise their responsibilities as citizens in a world in which Western concepts must be reconciled and harmonized with those of Asia and the Middle East. This will require new familiarity with comparative economic, social, and political concepts and customs. Our college and university students must be made fully aware of the developments of the last few decades to understand the demands of the new position of leadership into which we have been thrust since the second world war. They must understand the limits as well as the possibilities of leadership in coalitions of free states and in parliamentary organizations such as the United Nations. Only in this context can they comprehend the new forces at play in the world. Such education is essential to understand what we can do to meet the Soviet bid for political and economic leadership of newly independent states and those peoples still seeking self-government or independence.

I would advocate that all colleges teach their students the cold facts about communism. They should know the origin of the communist ideology, its evolution into an absolute dictatorship under the Soviets, its methods of subversion, its weaknesses and its strength, its spurious appeal in an era of vast social change.

I believe the junior colleges have a special responsibility in this regard. A great many of your students will complete their formal education with you. They will then go directly into business, industry, and trade. Others will continue preparation for their life's work. While you have them, they should be exposed to a general course on world affairs. If this is done, they will be far better equipped to discharge their responsibilities of citizenship, cognizant of the strength of democracy and both aware of, and vigilant to, the challenge of communism.

This responsibility of the colleges and universities becomes greater as the Soviet Communist threat becomes more long-range. It is not only a threat of military aggression to be met by military preparedness on the part of the free world; it is a threat for years to come. Continuing deterrent power is essential in the nuclear age. But this must be backed by an increasingly informed American public opinion in the field of foreign affairs.

Many of your graduates will be called upon to go abroad to represent the United States in one capacity or another. In the military or diplomatic services, as technical specialists, as recipients of private or government study or travel grants, they will have the opportunity to speak and act for our society of free peoples. They should be equipped to discharge this responsibility in meaningful terms to the people of other lands.

Statistics, I realize, are sometimes misleading. But statistics show that the Soviet Union is training and graduating far more scientists and technicians than is the United States. The Soviet Union is determined to out-perform us and out-produce us in the scientific and industrial fields. They are not doing so now, but we have no grounds for complacency. The junior colleges, I believe, should provide the best in in scientific and technical training for their students and encourage and stimulate them to go on to the university for higher training. American leadership is not self-perpetuating. It must be cherished and inculcated at every level of education.

I would venture to direct a word to the presidents and administrators of the great American junior college system. The teachers whom you employ are the caretakers of tomorrow's civilization. It is to them that we entrust education for leadership and understanding in this complex modern world. Only *good* teachers can do this. It takes good salaries to attract and keep good teachers. They should have at least the incentive and security which we provide for labor, for our armed services, and for the public service. Arnold Toynbee has written that societies have often been spurred to self-improvement in the face of external challenges. If the threat our society now faces teaches us to place a higher premium on our intellectual and educational human resources, it will have served at least one useful purpose. There is no doubt that a free society can meet and surpass any challenge posed by a society under dictatorship. But to do so, it must both recognize and accept the challenge.

FACTS AND FALLACIES ABOUT THE UNITED NATIONS

Of great importance in the teaching of international affairs is a study of the role of the United Nations. This is not an ephemeral organization. It is a going concern affecting the peace, security, and well-being of nations on a day-by-day basis. We must know how it was created, what it has done, and what it can and cannot do.

The United Nations since its founding has had strong bipartisan support from the Congress. But this support cannot be taken for granted. It must be based on an informed and sound public opinion. It is, after all, the responsibility of the Congress to reflect public attitudes on important matters

of foreign policy. The public, therefore, has a heavy responsibility to keep itself accurately informed on foreign policy issues. With regard to the United Nations, this means that we must sift fact from fiction. Here a little misunderstanding goes a long way. Let us consider, for a few moments, some of the common fallacies about the United Nations.

It is said that the United Nations is a super state with treaty making powers. This, of course, is not the case. The United Nations is a voluntary association of sovereign states. It has no power to legislate, to levy taxes, or to make treaties. The members may propose conventions and treaties, but these are only binding on countries which subsequently approve them through their constitutional processes. In our case, this means approval by the United States Senate.

It is said, by a few critics, that UNESCO interferes in, and dictates to, our American educational system. This likewise is untrue. UNESCO, which is also a free association of nations, does make recommendations to member countries regarding teaching about the United Nations and teaching to foster international understanding. It is entirely up to the member countries whether they want to follow these recommendations or not. And yet there is a small but vocal minority in this country which continues to regard UNESCO as some sort of threat to our educational system and to American youth.

Shortly after the inauguration of President Eisenhower, this administration undertook an independent appraisal of UNESCO to determine whether or not the charges against it were valid. President Eisenhower appointed three distinguished citizens to study UNESCO activities. Let me summarize for you the principal findings of this group:

1. UNESCO does not advocate world government or world citizenship in the political sense.
2. UNESCO does not attempt, directly or indirectly, to undermine the national loyalties or to encourage the substitution of loyalty to, and love for, a supernational authority for loyalty to, and love for, one's own country.
3. The official bodies and the personnel of UNESCO observe the provision of the UNESCO Constitution which prohibits UNESCO from interfering in matters within the domestic jurisdiction of member states. UNESCO does not attempt to interfere in the American school system.
4. There was no evidence of atheism or anti-religious bias in any of UNESCO's work.

It seems to me that these findings should more than counteract the negative criticisms that have been made with respect to UNESCO.

But we must not be content with merely laying bare fallacies about the United Nations. We must be clear on why the United Nations deserves support.

Since its foundation, the United Nations has been the most effective mechanism available to the world for settling international disputes. It has facilitated peaceful change where violence might otherwise have been the only course. We have the examples of the peaceful settlement of the Indonesian-Dutch conflict, the dispute between India and Pakistan over Kashmir, and the removal of the aggressive communist threat to Iran and Greece.

We have the important example of the resistance to aggression in Korea in which the United States called for and got the material or moral support of the overwhelming majority of the United Nations members. This may well have prevented world war three.

The United Nations, at President Eisenhower's initiative, has promoted the peaceful uses of atomic energy. The historic Peaceful Uses Conference held at Geneva last summer opened up vast potential benefits which the atom has made possible for mankind.

The work of the Technical Assistance Program and the Specialized Agencies has raised standards of living and has brought prospects of economic and social well-being closer for millions of peoples everywhere.

These are some of the reasons why the United Nations deserves our continuing support. President Eisenhower has called the United Nations man's best hope to substitute the conference table for the battlefield. He has said, and I certainly agree, that if we did not now have a United Nations we would have to create one to cope with the common problems of the world. In the United Nations we get a great deal for very little cost. It will prosper and serve our purposes and the purposes of the free world if we give it our continuing, enlightened, and critical support.

THE UNITED NATIONS CANNOT SOLVE ALL OUR PROBLEMS

Understanding and support for the United Nations does not mean unthinking approval of everything it does. Nor should we look upon it as a cure-all or panacea for all the world's ills. The United Nations can only be a "center for harmonizing the actions of nations" to the extent to which each sovereign state is willing to cooperate for the common good. There are many issues which it has been unable to solve so far. For example, once again we are faced with mounting tension between Israel and the Arab States in the Middle East. The United Nations could probably resolve that issue if the parties concerned were willing to cooperate. I believe the United Nations must continue to play a crucial role in ameliorating the situation in the days ahead. This is no place to assess blame for what is happening in the Near East.

Neither the Israelis nor the Arabs are guiltless in the tense situation which now prevails there. If the two sides would fulfill their obligations under the Security Council resolutions and would carry out the recommendations of General Burns—the UN Truce Supervisor—they would have done much to lessen area tensions. However, aside from the responsibility of the Arab States and Israel for preventing hostilities in the Near East the rest of the members of the United Nations have a serious responsibility — indeed an obligation — to keep the peace there. This cannot be done by irresponsible shipments of arms to the countries in that area, or by attempting to maintain a precarious "balance of arms" between Israel and the Arab States. An arms race will magnify suspicions, and tend to create the impression — if not the fact — of power alignments which can only lead to hostilities disastrous for the Near East and possibly the world.

We are vitally interested in the peace and welfare of the Near East as a nation and as a member of the Security Council. We are convinced that urgent and early action in the United Nations is necessary on the problems that confront us all in the Near East.

The United Nations, through its members, is the logical focal point for remedying the dangerous developments which confront us. What the United Nations can and must do is something which, I can assure you, the United States is earnestly and prayerfully considering.

Similarly in the field of disarmament. Despite ten years of negotiation, no safeguarded system of disarmament has yet been agreed upon. The threat of atomic disaster still hangs over a man's head. From the very start, in 1946, the United States has been squarely on record for a genuine program of safeguarded disarmament. The Soviet Union has consistently blocked progress, but the quest continues, for we cannot afford to slacken our efforts.

President Eisenhower has given world leadership in the search for ways to put the atom to the service of mankind. In his letter to Premier Bulganin last week, the President suggested concrete measures, which, as he wrote, "if carried out adequately, would reverse the present trend toward a constant increase in nuclear weapons overhanging in the world. My ultimate hope," the President said, "is that all production of fissionable materials anywhere in the world will be devoted exclusively to peaceful purposes." This month the Disarmament Sub-committee of the United Nations will try again in London. The United Nations provides a forum where this problem can be solved, and solved it must be.

Let us remember this. Many important and difficult international problems are solved outside the United Nations. But the really tough ones, the

well-nigh insoluble ones, come to the United Nations. It is, in a way, the court of last appeal. I don't believe the United Nations should try to shelve or dodge such problems. But let us remember that the United Nations doesn't *create* them. The organization mirrors the realities of the world. If the image is ugly, it is not the mirror that is at fault.

CONCLUSION

In conclusion, the challenge of the new Soviet offensive faces all of us. It is not a short-run proposition. The Communists are not handicapped by any timetable. The cold war—with all its trickery and fraud, its subversion and sabotage, and perhaps even its peripheral outbreaks of violence—may run for 10, 20, 30 or 40 years.

This will call for firmness and determination and patience on the part of the American people—together with a willingness to sacrifice over a long period of time. It will call for flexibility and understanding. Let us not waver in our determination to preserve our heritage of freedom and to create those conditions in the world in which the cause of free men can flourish.

To sum up, we must understand the long-range nature of the Soviet threat and meet it with courage and imagination. We must continue to support the United Nations and the high purposes and principles for which it stands. We must work closely with our allies and not try to go it alone. We must demonstrate to the uncommitted nations of the world the enduring values of democracy and freedom. If, as a nation, we follow this course, we can face the future with confidence that freedom will prevail.

Executive Secretary's Annual Report

Jesse P. Bogue

This is our tenth annual report to the Association. During this past year we have enjoyed our usual good health, so that not a day has been missed from work because of illness. We regret to report that in violation of the specific directions of your Board we were unable to take but nine days of vacation. Unfortunately, and because of no one's fault in particular, there were several changes in the office personnel during the year. These changes made necessary a great deal of additional attention to office procedures. Some of the changes, if not most of them, resulted from the low salaries that we have paid employees in comparison with prevailing salaries paid in other offices in Washington. We believe that this situation will be changed during the present year.

The work in the Washington office has been heavy during the year, and we believe that it has been carried with general satisfaction in spite of changes in personnel. Our relations with all other education groups have been pleasant and cooperative in every respect. Our relations with agencies of the government have also been satisfactory. We have an excellent coworker in the U. S. Office of Education in Dr. S. V. Martorana, the Junior-Community College Specialist.

All business procedures for the *Junior College Journal,* as you know, are handled in the Washington office. The expenditures for the *Journal* were $7,890.62 and the income from subscriptions and advertising almost met this expenditure, namely, $7,718.23. In addition, three copies of each issue are mailed to each institutional member and one to individual members.

The conference on religion in junior colleges was held at Dallas, Texas, April 5 to 7, and a great deal of the correspondence and other details were carried out in your office in Washington.

A total of 17 field trips were made ranging in length from one or two days to 12 days. These were made to junior colleges, to regional and state meetings, for planning groups for the expansion of junior college education in

some states, and for one summer workshop at Syracuse University. The income from these trips amounted to $3,092.59, all of which was paid into the treasury of the Association. Traveling expenses paid by the Association for the year amounted to $2,150.00, and the amount paid out by the executive secretary was $2,145.21. Thus, from the income from field trips the executive secretary paid into the Association about $1,000 more than was spent. This surplus came largely from commencement addresses and the summer workshop. In the expenditures were the costs for the annual convention for the executive secretary and for the summer meeting in Chicago.

In considering the Washington office, it is our judgment that there is real need for a competent assistant to the executive secretary. The work has grown to such an extent and the needs for the more immediate future will be increasing to the point that more than one person who is well acquainted with junior colleges and in a position to exercise judicious decisions is required on the job. Moreover, it is almost impossible for one person to handle the affairs of the Association at the executive level and have any free time to study or even to take a vacation. What we are saying is comparable to what you as top administrators would say to your boards of trustees if you had no persons in your colleges second in position to you in authority. The president of a college must have a good dean, and the executive secretary of your Association must have a competent assistant.

The *Junior College Directory* was published for 1956 through the editorial work in Washington. This is an enormous task. No one who has not engaged in this work can have the slightest conception of the extent and complicated detail involved in this undertaking.

The 12 issues of the *Newsletter* have been published with a circulation of about 1,600. The executive secretary has written two articles for each issue of the *Junior College Journal,* namely, From the Executive Secretary's Desk, and The Junior College World.

American Junior Colleges, fourth edition, is being published in April of this year, a volume of nearly 600 pages. The executive secretary is the editor of this edition as he has been for editions two and three. It is published by the American Council on Education and distributed by the Council.

In cooperation with Norman Burns of the University of Chicago the executive secretary contributed a chapter in the *Yearbook*. You have already listened to Dr. Johnson about this project and have seen the table of contents. We believe that this book will be of great assistance to the junior college movement especially in view of the fact that there appears to be a rather unusual awakening among the states for sound legislation.

In the field of research Dr. S. V.

Martorana and Dr. Hutchins of the U. S. Office of Education are now engaged in a national study of the ways in which junior colleges are organized and financed. We wish to urge all of you to give them the best possible cooperation on this project. When it is completed it will be the most complete study of its kind that has ever been done. Judging from our correspondence, it will be of great assistance to the junior colleges individually, to local communities, and to the several states.

Dr. C. C. Colvert and a graduate student at The University of Texas are making a study of the cost per student in junior colleges. A former study of this nature was well received and the bulletin has been completely sold. More recently several inquiries have been received about the prospects of a similar publication. Mr. Kenneth Brunner, an instructor at St. Petersburg Junior College, Florida, is making an extensive study for the Community College Council and the Florida Council for the Study of Higher Education on two questions: first, what should a state's legislative program be for community colleges; second, how should a state administer the community college program. A graduate student at the University of Wyoming is making a study of the student personnel services of the junior colleges of the North Central region. A considerable number of investigations are in various stages of completion regarding community services in selected junior colleges, the teaching of English in these schools, the curriculums of selected junior colleges in relation to known community needs, and a history of the junior colleges of Michigan. The executive secretary has acted as a juror and consultant on most of these studies. Even as far away as Japan, Professor Akira Watanabe of the University of Hiroshima is writing a book on the rise and development of the junior college movement in the United States to be published in Japanese. We have had the pleasure of extensive correspondence with him and have been in a position to send him several publications.

We believe that one of the most significant studies in higher education today is under way at the University of California. It is being directed by Dr. T. R. McConnell. Extensive assistance is being given by Dr. Leland Medsker, Dr. James W. Reynolds, and other junior college authorities. The study deals with the problem of diversification in higher education and the manner in which various kinds and types of institutions can meet the needs of this nation. A prominent place is being given to the consideration of the junior colleges.

Your Association is now represented on the Advisory Committee of the Veterans Administration by Dr. Harry E. Jenkins, the Committee on Relations of Higher Education with the Federal Government by Mr. J. B. Young, the

Educational Advisory Committee of the Armed Forces by Dr. John L. Lounsbury, the Committee for the Accreditation of Service Experiences of the American Council on Education by Dr. Basil H. Peterson, by six junior college administrators on the Commission on Accreditation and by one member on the executive committee, by Dr. Leland Medsker and Dr. A. M. Meyer on the National Commission for the Study of Sources of College Teachers, and by Hugh G. Price as second vice-president of the American Council on Education. There is also a full-time junior college consultant in the person of Dr. Marvin Buechel, and a full-time specialist in the U. S. Office of Education, Dr. S. V. Martorana. To my personal knowledge there was only one junior college representative on any of these groups ten years ago, namely, Dr. Arthur Andrews, who was appointed from the junior colleges to the Advisory Committee of the Veterans Administration. Moreover, we are assured that junior college representatives will be appointed to the President's Commisison on Higher Education.

Junior college people were sorely disappointed when the grants were made by the Ford Foundation to increase teachers' salaries. Your office in Washington has to bear the brunt of many rather sharp criticisms for what was considered the failure of the Association in this matter. Extensive correspondence, telegrams, and telephone calls were required. The truth of the matter is that, in the words of the vice-president of the Foundation, "We did not request information from the American Association of Junior Colleges, it is true, neither did we request information from the Association of American Colleges or the Association of American Universities." It is not my purpose to offer an alibi on this matter, but in fairness, responsibility can scarcely be placed on an individual or organization when it did not know what that responsibility was and further when no opportunity was given to assume such responsibility.

We would like to add one word about our convention theme. Since its adoption last summer, a new turn has been taken in the relationships of the free nations with communism. A sharp challenge has been thrown down to the Western powers by the determination of Russia to penetrate many of the nations of the world by economic methods. Great numbers of Russian youth are being trained in engineering, science, and technology and indoctrinated in communistic teachings. The obvious and declared purposes are to challenge the Western powers in the field of economic well-being. You can readily see, therefore, that the development of technology and international peace are two sides of the same thing.

Some people believed that consideration of automation was largely in the realm of fancy. Expenditures of

$3,500,000,000 last year for automotive machines is scarcely in the realm of fancy. There are many facets of the whole problem as will be brought out in the presentations and discussions here. John Diebold in *Collier's,* March 16, 1956, probably states the case for the broad view of education when he writes: *"For the nation as a whole,* automation increases the already urgent need for more and better educational facilities—not merely to provide the skills, technicians, engineers, and managers required by new methods, but also to prepare everyone for the responsibilities, as well as the opportunities of increased leisure. Automation does pose a real and pressing problem for our society. However, the problem is not unemployment; our country will no longer tolerate mass unemployment. The problem is education—education for an age in which leisure is the center rather than the fringe of life."

In conclusion, it has been a real pleasure to work with the junior college people during another year, with the officers and committees of the Association, and with all the many committees in arranging for this convention. The cooperation of the host associations has been generous and complete.

American Association of Junior Colleges
Financial Statement

Reserve Fund

Bethesda-Chevy Chase Branch of Perpetual Building Association.... $ 9,550.63

Current Funds

	Budget 1955	*Income 1955*	*Budget 1956*	*Income 1956*
Receipts				
Cash Forward	$ 1,820.43	$ 1,820.43	$ 1,540.77	$ 1,540.77
Dues	28,200.00	28,125.00	28,800.00	23,802.00
J. C. Journal	7,400.00	7,718.23	7,600.00	964.75
Newsletter	250.00	253.20	250.00	2.00
Other Publications	2,200.00	1,688.92	1,600.00	95.70
Miscellaneous	125.00	77.57	775.00	585.48
Travel	2,500.00	3,092.59	2,500.00	314.03
Annual Mtg.	1,700.00	3,201.10	3,600.00	2,925.00
Total Receipts	$44,195.43	$45,969.34	$46,665.77	$30,247.73
Expenditures				
Executive Secretary, S&R	$12,000.00	$12,000.00	$12,000.00	$ 2,000.00
Executive Sec'y, Travel	2,150.00	2,150.00	2,000.00	500.00

Salaries	6,350.00	6,272.15	7,200.00	911.00
Soc. Sec.	206.40	209.00	288.00	52.88
Office Exp.	4,080.00	4,207.35	4,200.00	696.71
J. C. Journal	8,400.00	7,890.62	8,000.00	1,731.73
Newsletter	1,250.00	1,281.02	1,400.00	225.37
Other Publications	2,000.00	1,273.05	1,500.00	370.58
Annual Mtg.	1,700.00	1,667.82	3,000.00	381.64
B. of D.	2,000.00	1,779.53	1,800.00	127.63
Res. Comm.	1,177.03	1,177.03	1,500.00	878.02
University of Texas	2,082.00	2,082.00	3,126.00	.....
Miscellaneous	400.00	270.00	275.00	5.00
Capital Exp.	400.00	399.00	.....	.....
Contg.	.....	.....	436.77	.....
Reserve Fund	.....	.....	.....	.....
Total Expenditures	$44,195.43	$42,658.57	$46,665.77	$ 7,880.56

Cash on Hand, Riggs National Bank, February 29, 1956 ..... $22,367.17

Petty Cash Fund $75.00

* Note: $370 brought forward from Membership Dues paid in 1955 for 1956.

† $1,400 brought forward from Annual Meeting income—exhibit fees paid in 1955 for 1956.

Current Publications Received of Interest to Junior College Readers

ANDERSON, VERNON E. *Principles and Procedures of Curriculum Improvement.* New York: The Ronald Press Co., 1956. Pp. x + 468. $5.50.

This is a comprehensive book on curriculum improvement in school and classroom. Principles derived from research in human development and from democratic ideals are presented as guides to procedures, pointed up with illustrations from elementary, secondary, and college levels.

BERGH, LOUIS O., AND CONYNGTON, THOMAS. *Business Law.* New York: The Ronald Press Co., 1956. Pp. x + 1005. $7.00.

This book has been prepared as a practical and comprehensive text for college students of business. It is designed not merely to give instruction in business law but also to give training in logical thinking.

BILSKY, MANUEL. *Logic and Effective Argument.* New York: Henry Holt and Co., 1956. Pp. 127. $1.40.

This book presents in concise form the basic principles of logic. The material is geared to the needs of the student of English composition and exercises follow each lesson.

CALDWELL, ROBERT G. *Criminology.* New York: The Ronald Press Co., 1956. Pp. x + 749. $6.50.

This book is an introduction to criminology written primarily for college students. It is written to inform young people about the real nature and causes of crime, the economic costs of these problems and the vast social wreckage and exploitation associated with their growth.

DOUGLASS, HARL R. *The High School Curriculum.* New York: The Ronald Press Co., 1956. Pp. vii + 582. $6.00.

Like its predecessor, this second edition is the work of a group of recognized specialists in the various component fields. The volume is intended for use as a textbook for courses on the high school curriculum and as a book for teachers in service who wish a volume of information and stimuli to their thinking about curriculum improvement.

DYER, JOHN. *Ivory Towers in the Market Place.* Indianapolis and New York: The Bobbs-Merrill Co., Inc., 1956. Pp. viii + 205. $3.00.

This book is concerned with one important phase of American adult education — the university evening col-

lege. It is not a handbook for deans and directors on how to run an evening college but is a report on the evening college, its nature, its practices, and its problems.

HENRY, NELSON B. (ed.). *The Public Junior College.* Chicago: The University of Chicago Press, 1956. Pp. xi + 347. $3.25.

This is the Fifty-fifth Yearbook of the National Society for the Study of Education. It contributes to the further stimulation of interest in adult education programs and furnishes inspiration for the intelligent citizenry already engaged in promoting measures directed toward the effective integration of collegiate education and community life.

MCPEEK, JAMES A. S., AND WRIGHT, AUSTIN. *Handbook of English.* New York: The Ronald Press Co., 1956. Pp. xxiv + 562. $3.00.

This handbook is intended to serve college students both as a text for class study and as a work of reference which will answer most of their questions about language and its usage.

MUNN, NORMAN L. *Psychology.* Boston: Houghton Mifflin Co., 1956. Pp. xvi + 542. $5.75.

The aims of this third edition have been to give a representative survey of modern scientific psychology, to help the student develop insight into his own psychological processes and those of others and to suggest how psychological knowledge and procedures are applicable in the solution of personal and social problems, as well as many of those in business and industry.

THOMAS, CLARENCE KENNETH. *Handbook of Speech Improvement.* New York: The Ronald Press Co., 1956. Pp. v + 135. $2.75.

This volume is designed for people whose speech lacks accuracy or distinctness, fails to give the impression of a good social background, or suggests the patterns of another language.

WALL, W. D. *Education and Mental Health.* Paris: United Nations Educational, Scientific and Cultural Organization, 1955. Pp. 347. $3.00.

This publication embodies the results of a regional conference organized by UNESCO in Paris in 1952. The book presents, in eleven chapters, the major controversial issues in education, and indicates their implications for mental hygiene.

Principles of Administration in Junior and Community College Education for Nursing

by J. F. MARVIN BUECHEL, Ed. D.

Foreword by R. Louise McManus, *Director of Nursing Education, Teachers College, Columbia University*, and Introduction by Mildred L. Montag, *Director, Cooperative Research Project Junior and Community College Education for Nursing, Teachers College, Columbia University*.

THE AUTHOR of this book has traveled to many of the nation's junior colleges now offering programs for the education of student nurses. He interviewed directors and faculty members of the colleges as well as the administrative personnel of cooperating hospitals, in an effort to critically examine all the problems confronted by those who set up the initial programs.

From the mass of notes and tape recordings made during the interviews, Doctor Buechel was able to tabulate and select the items of greatest value to set them down as guideposts for those who now or in the future will be organizing this new plan of nurse education in junior and community colleges.

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